

The Botanic Gardens and Conservation in Malaya

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RESOURCES are not only fodder for industry but include the matériel for man's existence and his mental and physical well-being. Conservancy is a rational policy to avoid wasteful destruction of resources, to ensure that what is renewable, such as plant and animal life, is not utilised (destroyed) beyond its capacity to maintain itself, and to put land to the best possible use for the country, thus avoiding conflicting demands on it.

The Botanic Gardens have been involved in various conservation projects which have contributed very significantly towards the development of modern Malaya*. The most important of these in the early days has without doubt been in the field of forestry, but there have been other matters the relevance of which to botany does not appear so obvious, as for example town water supplies and the resettlement of aborigines. But times and accents change and the present trend is towards nature conservation to protect the little of the natural landscape that is left to us.

Early writers on eighteenth and nineteenth century Malaya emphasised the extensiveness of the forests. In their extensiveness authority saw no need for protection. When the Botanic Gardens were first established in 1859, the Singapore forests had already been so destroyed that Government had on its hands no less than 45,000 acres of abandoned land. (I. H. Burkill, 1918.) That was over a quarter of the Colony. Such reckless destruction had spread to Malacca and Penang and into the Malay States.

Murton, Superintendent of the Botanic Gardens, 1875–80, pointed out in his first annual report (1876) that good timber trees had almost entirely disappeared from Singapore. Government became alarmed at the increasing damage done to the forest of the Straits Settlements and Cantley, who succeeded Murton, 1880–87, was commissioned in 1882 to report on the forests of the three colonies.

* Malaya is used here to mean both Singapore and the Federation of Malaya.

Cantley (1883) recommended the formation of forest reserves as much for the protection of the timber resources they contained as for improvement by re-forestation with valuable species. In addition he specified the need of proper control over water catchment areas supplying public water services, and for the drafting of reliable maps. It is significant that the world over forestry officers are styled 'conservators'.

In 1884 Government set up a Forest Department under the Botanic Gardens establishment. By 1895 when the Gardens relinquished control of the Forest Department, Cantley and Ridley, who followed him, had secured 88,336 acres of forest reserves in the Straits Settlements. There is no doubt that the official implementation of Cantley's recommendations marked the beginning of a constructive policy of land utilisation and conservation in Malaya.

One of the most besetting obstacles to forest regeneration in Singapore was the frequency of *alang* fires over the areas adjacent to established reserves or in the pockets within the reserves. Cantley selected *Eugenia grandis* as a fire belt tree. Several of his avenues still exist.

During Cantley's time, the Gardens were concerned with the conservation of water resources. He became adviser to the Malacca and Penang Municipal Councils. Curiously the Gardens had nothing to do with Singapore's supply till very much later.

In the course of his duties with the water supply at Malacca, Cantley had to advise on a land settlement scheme for a part of an aboriginee tribe, the Jakun. This must rightly be considered a conservation of resources, not only because of the water scheme, but because people are a part of a country's resources and because conservation in a wider sense applies equally to a cultural heritage to which undoubtedly the aboriginee tribes of Malaya do contribute.

At a risk of altering the sequence of events, it is convenient here to mention the Gardens' contribution in the post war years to the land utilisation survey which culminated in the drawing up of the Master Plan for the development of Singapore Island. J. W. Ewart, Curator of the Gardens, was as well Agricultural Officer, Singapore, for the period 1948-54 during which time the survey was undertaken. Ewart working in conjunction with R. A. Wright, Singapore's Veterinary Officer, and the officers of the Land Office prepared plans for rural development and the demarcation of agricultural areas. With the creation of many new housing projects a large number of market gardeners were displaced and had to be resettled in the rural areas. These land utilisation plans brought up

many problems, not least of which was the loss of fertility of the upper slopes and tops of hills which had been bare of all but the most impoverished vegetation for decades.

In Singapore the water catchment area of the MacRitchie Reservoir had been extended by 1910 to the land surrounding the Peirce Reservoir. Much of it had previously been alienated for cultivation. The vegetation which returned was an *Adinandra* scrub which is typical of secondary growth on Singapore Island. In 1930 the Governor, Sir Cecil Clementi, saw in this land the makings of a public park. Therein lay a significant widening of the conceptions of conservation by the creation of a public recreational amenity. The Governor instructed that attempts be made to improve the forest and to create bridle paths and to beautify various vistas, which were afforded, with stately trees. The arboricultural work fell to the Botanic Gardens, but it was beset with obstacles and only a little success was achieved before the outbreak of the 1939–45 war stopped this work.

In the 1930's there was a growing public awareness that all was not well with the conservation measures for Malaya's wildlife. A commission of enquiry was established under the chairmanship of T. H. Hubback whose report (1930) advocated measures to protect game within delineated reserves. The Botanic Gardens took no part in this enquiry which confined itself exclusively to animals and Malaya's vegetation was mentioned only insofar as it provided a habitat for wild animals. Singapore itself got but passing reference—that the whole Island should be declared a refuse for most species of birds. The Botanic Gardens however saw the matter in a wider perspective and Holttum advocated to authority that since the F.M.S. enactments protected only animal life but not plant life, the principle that both should be considered together ought to be recognised. Holttum also advocated the reservation of areas containing uncommon plant communities before they were lost for all time under some other form of development. In particular he recommended the protection of Taman Sedia in the Cameron Highlands and Gunong Pantii in Johore. After the war Henderson advised in the setting up of Templer Park just north of Kuala Lumpur which has within its limits Bukit Batu Takun (1,387 ft.) a limestone outcrop with its peculiar flora.

In Singapore the Forest Reserves were deleted in 1935 and Holttum and Corner recommended Government to put those at Bukit Timah, Kranji and Pandan, under the Botanic Gardens. In 1939 these areas were reserved again under the Forest Reserves Ordinance and the Director of Gardens, after a lapse of 46 years,

became again the Conservator of Forests. But there was no intention this time of commercial exploitation: it was for absolute protection to provide areas for research, education, recreation and as samples of the country's biographic history and heritage.

These reserves survived the war thanks to the interest of the Japanese Director of Gardens, successively H. Tanakadate and K. Koriba. But in the years after the war the reservation of Bukit Timah came into conflict with granite quarrying interests. Government set up a commission and its reports (Harvey 1950, 1951) recommended the enactment of legislation to put the reserves on a modern footing under a Nature Reserves Ordinance. This recommendation was implemented in 1951. To the three reserves under the control of the Botanic Gardens were added Labrador Cliff, and the Municipal Water Catchment Area.

The intention of the new ordinance was: "*To provide for the dedication and administration of certain lands in the Colony of Singapore as Nature Reserves*". A Board of Trustees was created with the Director of Gardens *ex-officio* Chairman, and the Board was directed to undertake the propagation, protection and preservation of the indigenous fauna and flora of Singapore and to preserve objects and places of aesthetic, historical and scientific interest. The Board is empowered to provide facilities for study and research.

The reserves when they were created, and still are unique in Malaya. They put Malaya in fact in the forefront of the countries of South-east Asia from the point of providing field research facilities as well as providing educational and recreational amenities so close to the centre of population.

Nature conservation is in itself a development project just as are town planning or the building of aerodromes, roads or railways. But since its stock-in-trade is things which live, as a project it is not amenable to constant change and interference and so it must be considered as a long term one. Allowed to grow on its own it is a complementary anodyne for a modern society in this age of concrete.

This brings the matter up to the present time. The story has had an expanding theme from natural bounty to destruction, through exploitation for commercial benefit to cultural and educational ends. All these stages remain with us in varying degree, but it is to human advantage to eliminate for all time wastefulness. The part played by Botanic Gardens in this endeavour has been fundamental and of great significance in Malaya's development. These achievements have been and will continue to be of the greatest importance for the future.

REFERENCES

- BURKILL, I. H. 1918. *Gardens' Bulletin, S.S.* 2 (2) 1918, 55-72.
- CANTLEY, N., 1883. Report on the Forests of the Straits Settlements.
- HUBBACK, T. H., 1932. The Report of the Wildlife Commission.
- HARVEY, J. A., 1950. Interim Report of the Select Committee on Granite Quarries and Nature Reserves, No. 45 of 1950, Colony of Singapore.
- HARVEY, J. A., 1951. Final Report of the Select Committee on Granite Quarries and Nature Reserves, No. 6 of 1951, Colony of Singapore.
- MURTON, H. J., 1876. Report on Government Botanic Gardens for 1875.

Use has also been made of unpublished papers in the Botanic Gardens Archives.